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ABSTRACT

This paper describes the dissemination effort that has resulted in the extensive use of the Student Team Learning Program, an instructional process designed for the purpose of improving race relations in desegregated schools. Various attributes of the program that have enhanced its adoption in over 1000 school districts are examined and the effectiveness of differing dissemination strategies is considered. The roles of the National Diffusion Network, the Race Desegregation Centers, State Departments of Education, Emergency School Aid Act programs, regional educational laboratories, and administrators and teachers in the dissemination process are reviewed. The report concludes with a discussion of the implications of this project for the dissemination of other educational innovations. It is suggested that the development of adequate educational technology will help solve many dissemination problems. (Author/APM)

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Disseminating Student Team Learning in Desegregated Schools:

A Case Study

Grant No. NDN-G-080

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Introductory Statement

The Center for Social Organization of Schools has two primary objectives: to develop a scientific knowledge of how schools affect their students, and to use this knowledge to develop better school practices and organization.

The Center works through five programs to achieve its objectives. The Studies in School Desegregation program applied the basic theories of social organization of schools to study the internal conditions of desegregated schools, the feasibility of alternative desegregation policies, and the inter-relations of school desegregation with other equity issues such as housing and job desegregation. The School Organization program is currently concerned with authority-control structures, task structures, reward systems, and peer group processes in schools. It has produced a large-scale study of the effects of open schools, has developed Student Team Learning Instructional processes for teaching various subjects in elementary and secondary schools, and has produced a computerized system for school-wide attendance monitoring. The School Process and Career Development program is studying transitions from high school to post secondary institutions and the role of schooling in the development of career plans and the actualization of labor market outcomes. The Studies in Delinquency and School Environments program is examining the interaction of school environments, school experiences, and individual characteristics in relation to in-school and later-life delinquency.

The Center also supports a Fellowships in Education Research program that provides opportunities for talented young researchers to conduct and publish significant research, and to encourage the participation of women and minorities in research on education.

This report, prepared by the Studies in School Desgregation program, describes the ongoing nationwide dissemination of the Student Team Learning process for improving race relations in desegregated schools.

Disseminating Student Team Learning in Desegregated Schools:
A Case Study

Abstract

The Student Team Learning program is being used in approximately 1000 school districts, primarily for the purpose of improving race relations in desegregated schools. This paper describes the dissemination effort during the past two-and-one-half years that has resulted in this extensive use of the processes, describes the attributes of Student Team Learning that enhanced its dissemination, and examines the effectiveness of the various dissemination strategies.

Perspectives of dissemination of educational innovations are discussed, and it is suggested that the development of adequate educational technology should not be neglected as part of the solution to the problem of dissemination.

Acknowledgments

The work described in this report could not have been accomplished without the efforts of many people, many of whom are listed in the preface of the Using Student Team Learning teacher's manual. Much of the dissemination activity described was conducted by Ruth Carter and Marshall Leavey of the Center. We also are indebted to J. Richard Lewis, Philip Luccasse, and certified trainers throughout the country.

Dissemination of Student Team Learning in Desegregated Schools:
A Case Study

Dissemination of educational research and development products and processes has been recognized within the past few years as being a key--and most difficult--component of school improvement. This paper reports on the dissemination of a specific R & D product--Student Team Learning--as it has occurred over the past two-and-a-half years. The paper focuses on the dissemination of Student Team Learning in desegregated school districts for the purpose of improving race relations, reducing minority isolation, and improving student achievement. Many of these desegregated districts include major urban areas.

The basic conclusion of the general dissemination literature is that most efforts to disseminate educational R & D products have ranged from less-than-successful to abject failure (Mann, 1976; Fullan and Pomfret, 1977). The dissemination of Student Team Learning, in contrast, seems to be proceeding rapidly and effectively through various channels into the classrooms of the nation's schools. The first part of this paper examines the dissemination effort by looking at the attributes of the product, the development of supporting materials and technical assistance capability, and the dissemination strategies employed. The second part of the paper draws conclusions about the dissemination of R and D products in general by relating the Student Team Learning dissemination effort to the dissemination literature.

Making School Desegregation Work

Although desegregation of schools has been accomplished in many districts throughout the country, the anticipated benefits of desegregation have not occurred. Im most desegregated schools, cross-race interaction and cross-race friendship formation have simply not happened, and student achievement, in general, has shown no increase.

School districts, and especially the large urban districts, are well aware of this problem, and have sought to correct it in basic ways--through human relations training, multi-cultural education, compensatory education, counseling, parental involvement, bilingual education, student participation in decision-making, and so on (Russell et at , 1979). None of these programs, however, has been found to be successful in changing racial attitudes or promoting cross-race friendship (Forehand, Ragosta, and Rock, 1976; Slavin and Madden, 1979). At the same time, student achievement has remained as large a problem as ever.

Thus desegregated school districts, and especially the urban desegregated districts, despite years of spending a multitude of dollars to install a multitute of programs, still face their two basic needs in order to make school desegregation work--a way to improve race relations and student achievement within the desegregated school. At the same time, the two basic outcomes of Student Team Learning are the improvement of race relations and the improvement of student achievement. The dissemination of Student Team Learning, therefore, has begun with a major advantage over many previous dissemination efforts--the program outcomes match the needs of desegregated school districts. At the same time, the program consists of structural changes in classroom organization which in no way point an accusatory finger at teacher and administrator attitudes as being the reason for desegregtion problems.

Status of Student Team Learning Dissemination

In the dissemination field, various words are used to try to describe the degree of usage of educational innovations in schools and school systems. These terms include diffusion, implementation, adoption, installation, adaption, institutionalization, and so on. The word dissemination itself

may describe the simple provision of awareness materials to one school or may refer to years of actual use of a project by a large school district.

The dissemination of Student Team Learning in this paper refers to reaching the point at which a number of teachers in a school or district have been trained to use these processes and are, in fact, using the processes in their classrooms at least on a trial basis. Thus there are some districts in which a minimum of use is occurring; in other districts, a large number of teachers are involved. There are some districts that have been using the processes for two months; others have been using them for two years. There are some districts which started small and have expanded their use; other districts have started large and then reduced their use. This paper does not try to distinguish these levels of use in schools and in districts. It seeks instead, to describe the work that has led to the current use of Student Team Learning nationwide and to draw some conclusions about how the attributes of the product, the dissemination strategies employed, and the nature of the educational system itself have influenced the effectiveness of the dissemination effort. The study of actual degrees of use within school systems, both in general and on a case-by-case basis, is in progress and will be reported later.

Figure 1 shows a very incomplete but representative listing of school districts throughout the United States in which we have documentation that teachers are using Student Team Learning, primarily for the purpose of improving desegregation. As noted, these implementations are at various stages--some just beginning, some small scale, some large scale, some firmly established for a year or more, and so on. The approximately two and-one-half-year effort that has resulted in this list is the focus of this paper.

Figure 1

Approximately 1000 school districts are using Student Team Learning. Major urban districts and other desegregated districts include, among others:

Dothan, Al
Sacramento, CA
San Francisco, CA
Oakland, CA
Denver, CO
Wilmington, DE
Washington, DC
Miani, FL
Honolulu, HI
Des Moines, IA
Chicago, IL
Topeka, KS
Louisville, KY
New Orleans, LA
Anne Arundel County, MD
Baltimore, MD
Prince Georges County, MD
Detroit, Mi
Grand Rapids, MI
Charlotte, NC
Omaha, NE
New York City, NY
Cincinnati, OH
Portland, OR
Pittsburgh, PA
Columbia, SC
Nashville, TN
Knoxville, TN
Dallas, TX
El Paso, TX
Houston, TX
San Antonio, TX
Danville, VA
Norfolk, VA
Richmond, VA
Seattle, WA
Charleston, WV

Student Team Learning Program Attributes

A complete description of the Student Team Learning processes is contained in the Student Team Learning Teacher's Manual (Slavin, 1980). Student Team Learning consists of three classroom instructional processes--Teams-Games-Tournament, Student Team-Achievement Divisions, and Jigsaw. The unifying concepts in each process are (1) students work together in structured teams to accomplish a task, (2) each student on the team has a good chance to contribute to the team's academic success, and (3) each student on the team is individually accountable for learning.

Student Team Learning is a true example of an educational R & D product. Its development is the result of research conducted over a seven-year period by the School Organization program of the Center for Social Organization of Schools at The Johns Hopkins University. It is a product based on social psychological theory and research and developed through field experimentation in actual school settings by researchers and developers in conjunction with teachers. It's effects--improved student racial relations, increased student learning of basic skills, increased mutual concern among students, and increased student self-esteem--are well documented in rigorous classroom studies (see Slavin, 1980, and Sharin, 1980, for reviews).

It's important to stress, in the beginning, the explicitness of the product. Although Student Team Learning requires a physical reorganization of the classroom and results in a reorganization of the classroom task, reward, and authority structures, it is nonetheless a specific set of processes and materials to be applied in a specific way. Teachers who use any of the processes follow a set of directions that set forth what they

should do on specific days and how they should do it. At the same time. they are provided with the curriculum materials required or--one of the few options in STL--they can convert their own curriculum materials to the STL format.

Technical Assistance

Technical assistance to school districts to help them decide whether they want to use STL consists primarily of information materials and awareness workshops. Awareness materials include a brochure that briefly describes the program and curriculum materials, a 24-minute filmstrip and tape that provides an overview of the processes, and various articles from education magazines and journals that describe the program and the research. At awareness workshops for teachers and administrators, the filmstrip and brochure are also used, and a brief simulation of one of the processes is included.

The project also provides technical assistance at the funding stage. School districts that want to use Student Team Learning are provided with information about the possibilities of funding through Title IV-C grants, through ESAA grants, or through use of the district's own funds.

The technical assistance provided to teachers who use Student Team Learning consists of information and training materials, a one-day training workshop, evaluation materials, and follow-up activities.

The information and training materials include the Teacher's Manual, curriculum materials, and the overview filmstrip. The Teacher's Manual is a 65-page how-to-do-it guide that specifically explains how to begin using the processes and how to continue their use on a day-to-day and week-

to-week basis. The manual is comprehensive enough that many teachers have used Student Team Learning without workshop training just by following the manual closely.

The evaluation materials consist of a three-page checklist that teachers use to ensure that they are following the correct implementation steps, and then use to report on the outcomes that they observe in their classrooms.

The training workshop consists of a simulation of the Student Team Learning processes, a total hands-on experience. In the workshop, teachers are treated as a classroom, given the objective of learning the concepts and processes of Student Team Learning, and then put through the actual processes in order to learn about them. The "classroom" is structured into teams; the teammates work together to learn the material; they engage in tournaments, expert group participation and team reporting; and go through the team scoring processes. Thus the workshop experience is affective as well as cognitive, as the teachers experience exactly what their students will be experiencing in the classroom.

Teacher evaluations of this training workshop are uniformly enthusiastic, both in terms of learning how to use Student Team Learning and enjoying the learning experience. Teachers typically comment that it is the "best workshop they've ever attended," and that they wish "more workshops would provide actual hands-on experience." In short, the Student Team Learning training workshop is dynamic and experiential--a far cry from the usual lecture-discussion mode of training, much as Student Team Learning itself differs from the lecture-discussion mode in the classroom.

The technical assistance available to Student Team Learning users also consists of a number of certified trainers who are fully capable of

conducting the teacher workshop training and providing follow-up assistance. These trainers are certified after participating in training sessions by the Center's project personnel and after reporting the results of at least one training workshop conducted on their own. Each trainer receives a workshop leader's manual that provides materials and specific instruction for conducting the teacher workshops. Thus the basic integrity of the teacher training experience is maintained no matter who is doing the training. About twice a year, the Center conducts a centralized certified training workshop in Baltimore at which 40-50 persons are trained as certified traners. This technical assistance aspect greatly extends the project's ability to service school districts.

Dissemination Strategies

The dissemination of Student Team Learning into desegregated school districts represents a pre-planned strategy to investigate all possible avenues of dissemination; to back away from any strategy that wasn't effective; to concentrate more fully on any strategy that was effective. Our planning was analogous to the planning of a cross-country vacation trip; we drew up an itinerary that included some specific steps along the way but which allowed for side-trips to follow roads that looked interesting and allowed for extra time to stay a while at places we found to be productive. Other analogies are also appropriate--e.g., the shotgun approach (if you fire enough pellets you have to hit something), and the fishegg approach (if you lay enough eggs some of them will be fertilized and hatch).

One of our first specific decisions involved the scope and depth of the dissemination effort. Dissemination, as previously implied, is a

matter of degrees of quantity and quality: do you want to use your time to work very carefully with a few schools and/or districts and thus produce a few high quality implementations, or do you want to use your time to work with as many schools and districts as you can possibly reach and take the chance that many of the implementations may not be high quality or may not "take" at all?

We chose the second option, for several reasons: We had a well-specified product; we had convincing research evidence of the product's effectiveness; and our experience with teacher use during the development and experimental studies indicated that teachers could be easily trained to use the product. In fact, many used the product without formal training simply by reading and following the instructions in the Teacher's Manual. In addition, DeVries et al. (1979) had found no differences in the implementation of TGT among teachers who received training and teachers who worked from the teacher's manual alone.

In essence, we decided that, due primarily to the attributes of the product, we had a good chance to achieve quantity (nationwide dissemination) without sacrificing quality (appropriate and continued use by schools and school districts).

Having decided on a nationwide effort, our strategy was then to identify the various audiences that would either use Student Team Learning directly or that would help us reach the actual users. This led us to target our dissemination efforts along three channels: coordinating with existing federally funded programs, working with state departments of education, and appealing directly to school district personnel (administrators, principals, and teachers).

Some vital decisions, however, were made prior to our conscious planning for dissemination. In retrospect, these decisions were probably as important, or more important, to the dissemination effort as were our actual dissemination plans.

1) The decision was made to develop specific curriculum materials for use with Student Team Learning, and inexpensive units were developed for Language Arts and Mathematics (grades 2-8), Nutrition (elementary and secondary), physical and life science, and others. Although the Student Team Learning processes can be used with teacher-made worksheets, gamesheets, and quizzes, it is doubtful that many teachers would be willing to invest the time and effort required.

2) The decision was made to provide a teacher's manual that erred on the side of overkill--that is, details of how to use the processes are thoroughly explained, leaving little room for misinterpretation.

3) The decision was made (after it had begun to occur naturally) to allow and even encourage persons other than project personnel to conduct teacher training. The realization that the use of such trainers would be beneficial led directly to the realization that we needed to develop a structured training workshop that would make training activities consistent, no matter who was doing them.

These decisions, as well as other smaller ones, occurred as Student Team Learning was being researched, developed, and somewhat loosely disseminated. They were basically decisions that made the product more appealing to teachers and that enhanced our technical assistance capability. Thus, at the point which we made a conscious decision to begin dissemination in earnest, many of the elements that we now believe to be vital to

success were in place or in the process of being put in place. Thus for us, as for others, the Research → Development → Diffusion model (Clark and Guba, 1974) proved not to be totally linear, although the Student Team Learning effort has probably been closer to that linearity than most previous innovations.

The discussion of our dissemination strategies will focus primarily on what now appear to be the most successful strategies in terms of reaching a wide audience and having some assurance that implementation of the program has occurred or is occurring in an appropriate manner. By far our most successful dissemination has occurred through coordination with the efforts of a variety of federally-funded programs.

First, the National Institute of Education, which supports the Hopkins Center as a research center, allowed us to apply carryover research money to the dissemination effort. Second, the National Diffusion Network, after JDRP review, funded Student Team Learning dissemination activities. Third, we identified the national network of Race Desegregation Assistance Centers as a potential user and promoter of Student Team Learning. Fourth, we recognized (as it became impossible not to) that ESAA-funded desegregation projects were seeking the improved race relations outcomes that Student Team Learning could provide. Fifth, we were aware of the dissemination function of the Regional Exchanges of the Educational Laboratories and Centers, and thus sought to incorporate Student Team Learning into their repetoire of disseminable products. Sixth, we interacted with Teacher Centers, Teacher Corps, Title I and various other federally-funded agencies that we thought were appropriate or who reached out to us because they thought we were appropriate.

The National Diffusion Network (NDN): The NDN is funded by the Department of Education to facilitate adoption of educational programs that are certified as effective by a joint OE-NIE panel, the Joint Dissemination Review Panel (JDRP). These effective programs are qualified for dissemination by a network of State Facilitators, at least one in each state, whose primary job is to help school districts adopt JDRP-approved programs. The programs themselves qualify for Developer/Demonstrator grants, and school districts can get Title IV-C grants to adopt them.

The NDN model of dissemination is well-suited to the characteristics of Student Team Learning, and vice versa. Essentially, the model begins with a replicable, transportable educational innovation with proven effects. Awareness presentations throughout each state serve to make teachers and administrators aware of the innovation, and they may thus elect to adopt it if it fits their school or district needs. Adoption consists of receiving training and using the innovation in the school or district, and the funding for the adoption may come from general district funds or from a Title IV-C grant written especially to adopt the project.

The NDN has been an extremely effective overall channel for the dissemination of Student Team Learning. Through this network, we have presented over 200 awareness sessions involving over 5000 teachers and administrators in almost every state in the nation. As a result of the awareness sessions, we have then trained over 1000 teachers in over 500 school districts to use Student Team Learning. A fair number of the NDN awareness and training sessions have been conducted by certified trainers, producing two major benefits. First, project personnel could not have conducted many of these due to time constraints. Second, certified trainers are usually

selected for these sessions for their proximity to the location, saving on travel costs.

Dissemination through the NDN has not focused exclusively on the use of Student Team Learning in desegregated schools. Many non-desegregated districts adopt the program in order to improve students' learning of basic skills. On the other hand, the NDN dissemination has reached some major desegregated districts, such as Detroit and New Orleans.

Race Desegregation Assistance Centers (RDAC's): These federally-funded Centers were created under Title IV of the Civil Rights Act of 1964 to assist desegregated school districts with problems of desegregation. There are three kinds of assistance centers; Race Desegregation Assistance Centers (RDAC's), Sex Desegregation Assistance Centers (SexDAC's), and National Origin Desegregation Assistance Centers (NODAC's). In many cases, these different DAC's are housed in the same organizations.

We targeted the RDAC's as potential users and promoters of Student Team Learning and used mailings, personal contact and visits to make them aware of STL effects on race relations. The majority of the RDAC's realized the applicability of Student Team Learning to their mission--of the 15 Centers, we established a close working relationship with eight and occasional relationships with most of the other seven.

Working with the RDAC's has been a very effective dissemination strategy. First, they are usually able to pay the travel and lodging costs for training. Second, they are often able to pay for release time for teachers, an especially valuable asset for a program that requires even minimal training. Third, the RDAC's, like State Facilitators, have

responsible educational change as their only goal, and they are thus motivated to get the job done effectively.

RDAC's work with desegregated districts and do much of their work in large cities and newly desegregated districts. A drawback of RDAC's in some cases is that they are used to consulting with districts and giving workshops on human relations to large numbers of school personnel, but are not experienced in going through the steps to actually help schools implement classroom-level or even building-level interventions.

In four of the RDAC's, their personnel have become certified trainers who have the full capability of introducing Student Team Learning into their area, providing training, and following up on the use. The follow-up capability, in fact, is one of their major strengths. Their responsibility is to their region and goes beyond the first installation of the program to include maintenance of the program.

It should be stressed that mutual interest is involved. We benefit from the regionality of the RDAC's and their extension of Student Team Learning into very appropriate districts. At the same time, they benefit from having a program that they can apply to help them do the specific job that they were created to do.

In some regions, the adoption of Student Team Learning has helped the RDAC's to improve their relationships with school districts. Previously, RDAC's essentially had no good tools to help districts improve desegregation. The best they could do was provide human relations training, which carried the implication, sometimes resented, that district personnel had integration problems because their attitudes were bad. The RDAC's can help districts apply Student Team Learning, however, with no value judgments being made.

Emergency School Aid Act (ESAA) programs: The Emergency School Aid Act was passed in 1972 to provide funds for school districts that were in the process of school desegregation. The funds were allotted in response to district proposals for plans to help the schools adjust to the problems of desegregation and meet the needs of their desegregated populations.

In 1979, the national director of the ESAA program was informed about Student Team Learning in a conversation with the NIE monitor of our Desegregation Studies program. The director asked for further information, which led to a presentation of Student Team Learning at a regional meeting of state ESAA coordinators. The coordinators, in turn, informed the district ESAA coordinators that Student Team Learning would be a good process to include in ESAA proposals. We then began to receive and respond to requests from the district coordinators for information about the project. Then, as grants were awarded, we had an influx of requests for teacher training and evaluation information. We are now working with a large number of districts, primarily in the South and Southeast, on large-scale implementations of Student Team Learning funded by the ESAA grants. Many of these are essentially urban districts--e.g. Richmond, VA; Columbia, SC; Grand Rapids, MI--and are multi-year projects that include provisions for Student Team Learning coordinators and evaluation of student outcomes.

Again, the ability of the project to bear up under these adoptions is greatly facilitated by certified trainers and by the fact that we can train a few school district personnel and qualify them to conduct the rest of the training in their districts. Also, the RDAC's have been especially

helpful in providing training to ESAA sites; in addition, especially in Georgia, certified trainers coordinated by the State Facilitator provide training. It's also notable that Student Team Learning in the Nashville, Tennessee school district is being adopted through a coordinated effort of the State Facilitator and MARDAC--the Mid-Atlantic Race Desegregation Assistance Center.

One factor that influenced the adoption of Student Team Learning through ESAA proposals is the basic skills emphasis of the program. Local districts were informed that remediation and compensatory education, the focus of many previous ESAA projects (Russell et al., 1979), was no longer to be emphasized in the proposals--that the emphasis was specifically on the correction of minority isolation in the schools and classrooms. Although most districts felt that this emphasis was appropriate, they were also concerned that remediation of basic skill deficiencies still had not been accomplished. They viewed Student Team Learning as a way to address the new emphasis without sacrificing the still-needed improvement of basic skills.

The adoptions of STL through ESAA funding are expected to become our most successful adoptions and already show signs of being so. They have much going for them--three-to-five year funding, specific local people whose job it is to coordinate and evaluate the program, teacher coordinators within the schools to handle day-by-day activities, and a genuine desire to help improve race relations within schools. Current federal budget cuts and block grant proposals, however, may muddy the waters within the next couple years.

In the dissemination process, the inclusion of Student Team Learning in ESAA projects was a serendipitous event--the result of an NIE person who knew about the program talking to an ESAA person who recognized its possibilities. However, as noted previously, our dissemination through ESAA has been considerably enhanced because we had awareness, training, and follow-up mechanisms in place that allowed us to respond to this event. At the same time, we take some credit for creating a climate, through multiple awareness efforts, in which the event could occur.

Regional Laboratories. NIE funds a network of regional educational laboratories which engage in research, evaluation, development and dissemination activities with a regional focus. The NIE labs differ from centers, of which we are one, in that the centers have a national focus, do more basic research, and are attached to universities.

One of our first dissemination moves was to contact the labs. We focused on a program within many of the labs called the Research and Development Exchange, or RDx (now called the Regional Exchange, or RE), which maintains regional information-dissemination centers.

Although we contacted all but one of the labs, this dissemination strategy did not turn out to be as effective as we had hoped. Two of the labs did facilitate our entry into their regions, but only one of these was then able to actively help us with dissemination. Many of the labs felt that it was not their role to help us or that their funding was too limited for them to be able to help us. The RE programs in the labs, we suspect, have a problem (from our point of view) similar to that of State Facilitators --the reluctance to help promote a specific program. This reluctance

is probably justified given the purpose of the RE, which is essentialy to help school systems determine their needs and then provide them with a variety of processes and products in response to those needs. Thus, the RE can count Student Team Learning among its resources, but has difficulty setting up specific conferences or promotions for its dissemination to the exclusion of other information and products.

The RE program itself was important in only one lab in helping us with our dissemination. What seemed to be more important was whether or not the particular person(s) we interacted with in the labs were interested in helping us, rather than the fact that the person(s) were in one or another program. At one lab, for example (CEMREL), a program designed to assist the St. Louis Catholic schools provided Student Team Learning as one facet of its assistance.

State Departments of Education: One of our initial strategies was to try to disseminate Student Team Learning in an organized, top-down manner through State Departments of Education. We visualized providing awareness of STL to these departments and working with them to reach middle-level administrators, district administrators, and finally, teachers who would adopt the program. This vision never approached reality.

The closest we came to following this model was in conjunction with the educational laboratories described above. The labs which did help us were able to set up training sessions for representatives of state departments of education. We paid travel expenses for thirteen of these representatives to attend such conferences, hoping to follow up these contacts by working with staff development personnel in the state

departments and also hoping that the individuals we trained would train others in their states.

This turned out to be an optimistic prediction, although some exceptions probably made the effort and considerable expense worthwhile. Despite workshop sessions that were very positively received, despite sincere and sometimes fervent promises from participants that they would take the techniques back to their states and get them out into their districts, these sessions with state department representatives had spotty results. In three states they made a fairly big difference; in perhaps six more they were important in a small way or turned out to be good contacts later for other (principally NDN) dissemination efforts; in the rest, we have seen no discernible effect, although the contacts may yet prove to be important.

Although our direct model of state department involvement seems unrealistic, it doesn't reflect the actual state department influence. Perhaps arbitrarily, we have classified the State Facilitators of the NDN in a separate category; in fact, many of the State Facilitators are located in the state departments and coordinate efforts with them.

Also, a recently emerging model of State Department dissemination shows great promise. In Maryland, the department is seeking to disseminate knowledge of instructional processes throughout the state to assist the districts in a statewide program called Project Basic. The department set up four full-day seminar-workshops, each devoted to a specific instructional process (one of which was Student Team Learning), and each attended by a number of administrators from each district in the state. The administrators are now selecting the processes that they feel are most appropriate

for their districts, and the state department is funding workshops for the teachers throughout the districts. This top-down but take-your-choice model seems well-conceived as a way for state departments to help the districts improve their instructional processes without interfering with district autonomy.

Direct Approaches to Administrators and Teachers: The awareness conferences held as part of our NDN activities are direct personal approaches to district personnel. We also tried an advertising approach and a direct mail approach.

We ran a one-third page ad in one of the major teacher magazines, describing Student Team Learning briefly and offering a free brochure. The ad generated 3,000 requests for brochures, which were sent, and which produced 107 orders for curriculum materials.

We also mailed brochures directly to 40,000 elementary schools, directed to language arts and mathematics teachers. This led to materials purchases, but the cost was very high for the number of orders. Further, purchase of materials does not in itself constitute adoption. In a telephone survey of people who ordered materials, we found that about 25 percent were actually using the materials and another 25 percent had "definite plans" to do so. The rest were apparently attracted by the low price and bought the materials just to have them. Most of these had not even read the Teacher's Manual.

Another direct mail strategy was somewhat more cost-effective. We mailed brochures, by name, to a purchased list of superintendents, assistant superintendents, and curriculum/instruction people. These generated a number of orders for complete sets of materials.

One of the difficulties of using direct mail and magazine ads to disseminate Student Team Learning is that teachers and administrators need to make two decisions before they will respond: first, the decision that the processes are important; second, the decision that the curriculum materials are worthwhile. These decisions are difficult to make based only on an ad or a brochure. It may be that, as Student Team Learning becomes even more widely recognized as an effective educational process, magazine ads and direct mail will be more effective methods for disseminating the curriculum materials.

A major concern with this type of "marketing," of course, is the lack of any personal involvement in the implementation of the processes. As we move into detailed study of the degrees of use of Student Team Learning in schools, the direct-mail purchasers will provide an interesting comparison group.

In summary, the dissemination of Student Team Learning in desegregated schools has consisted primarily of multiple planned strategies to take advantage of existing national dissemination channels. To use these channels most effectively, prior decisions were made to produce awareness, curriculum, and training materials, and to expand our own responsiveness through the use of certified trainers.

Our dissemination strategies and their success may be somewhat unique to the Student Team Learning project. As far as we know, our project and two other cooperative learning systems are the only systems available to school districts that claim to actually improve race relations among students in schools. We are thus certainly unique in terms of meeting this need in desegregated districts.

The project is also unique in that the training process consists almost totally of hands-on experience that influences teachers affectively as well as cognitively. It is also somewhat unique among educational innovations in being well-specified in terms of exactly what it is and how-to-do-it, and somewhat unique in being a true R & D product based on social-psychological theory and rigorous experimentation and development in order to operationalize the theory.

Despite these unique aspects, or perhaps because of them, the Student Team Learning dissemination experience has some implication for the dissemination of educational innovations in general. These are discussed in the next section of the paper.

Implicatons for Dissemination of Educational Innovations

This section attempts to relate the STL dissemination activities to the perspectives of previous dissemination studies and to discuss the variables that these studies have identified as important to successful dissemination.

Perspectives

In its short history, educational dissemination has embraced four perspectives. It could be argued that these four perspectives have existed concurrently; certainly they have overlapped; but they can also be viewed as evolving along a continuum, each springing somewhat from impatience with and disappointment in the preceding perspective.

The first perspective stated that research and development activities could produce innovations that schools and districts would then adopt with open arms. Dissemination would be simply a matter of informing districts about the innovations and then filling the orders. Building a better mousetrap was the basic idea, and the basic model was the linear one of R, D, & D--research, development, and diffusion--a logical, orderly process of

change. This model predominated in the late '60's and early '70's, especially at the now-NIE funded network of education laboratories and research centers that had been created by Congress in 1965.

Major studies, however, began to reveal some snags in this assumption--many R & D innovations were sitting on various shelves, with no schools clamoring to use them; in some schools where innovations were supposedly installed, there was really nothing happening at all; and in most schools where full-scale innovation attempts were being made, teachers and administrators seemed to be ignoring, sabotaging, and/or subverting the innovative effort (Charters and Pellegrin, 1973; Dissemination Analysis Group, 1976; Mann, 1976; McLaughlin, 1976; Pincus, 1976).

This state of affairs led to two further perspectives in the mid-'70's. The first was that the R, D, & D model didn't work because the linkages between innovations and schools were either not present or not effective. The second was that the R, D, & D model didn't work because schools were not receptive to change. In essence, the failure of dissemination lay in not being able to reach unresponsive schools.

Assuming the validity of these perspectives, correcting the problem required two strategies--improve the linkages, and make schools more responsive to change. The creation of the NDN and the Regional Exchanges of the educational laboratories were linkage improvements, but with different bases. The NDN base was a product line; the RE base was knowledge and expertise. The NDN thrust was to secure adoptions of innovations; the RE job was to increase state and district knowledge utilization through back-and-forth interaction processes. Meanwhile, major studies were conducted to probe the characteristics of linkers and the dynamics of the linking process (Cates and Ward, 1979).

The second strategy--to increase schools' responsiveness--was carried out through the NIE Documentation and Technical Assistance Program, which sought to improve the organizational capacity of schools, and the NIE Research and Development Utilization program. This program also dealt with linkage but was mainly concerned with generating local school improvement in problem-solving capability which would then enable the school to make knowledgeable use of linkage and of R & D products (Louis et al., 1979).

An earlier effort to improve school responsiveness was the creation of a League of Cooperating Schools, in California. This project was intended to help schools become responsive to their needs and to resources relevant to those needs (Goodlad, 1975).

A fourth perspective on dissemination has recently emerged. This perspective essentially states that the R, D & D model doesn't work because it attempts to deal rationally with school systems, which are not rational organizations. They are instead organized anarchies (Cohen et al., 1972) or loosely-coupled systems (Weick, 1976). In essence, in order to achieve innovation in schools, it must be recognized that the cultural and political milieu within which schools operate is a never-never land that cannot be entered according to preconceived plans based on preconceived goals. Berman (1978) makes this argument convincingly and provides a contrast of programmatic implementation with adaptive implementation. Programmatic implementation is possible if the scope of change is minor, the technology is certain, there is low conflict over policy goals or means, the institutional setting is tightly coupled, and the environment is stable. However, implementation must be adaptive if the scope of change is major, the technology is uncertain, the conflict over policy goals or means is high, the institutional setting

is loosely coupled, and the environment is unstable. If any of the latter five characteristics exist, the situation requires adaptive implementation strategies.

Thus far, this perspective has offered no applications that would assist innovators in helping to improve schools, except to say that we must realize what the "real world" is like. The implication is that improving education must be more adaptive than programmatic. Some advice is essentially negative: Don't make explicit plans and set explicit goals which, in the real world, will only serve to constrain the opportunities that might arise to make progress. Hood (1980) states the influence of the new perspective more positively, but very generally:

> The "new perspectives". . .require us to look far more carefully at situations; to attempt to perceive them in different ways; to be experimental; to tolerate ambiguity and to accept risks; to negotiate with others; to compromise; to accept and learn to use to good advantage our ignorance and uncertainty; to learn from others; to abandon misplaced presumptions of knowledge, power and control; to engender reasonable trust in others; and to learn much more about what others are really willing and able to do, and under what conditions. (p. 13)

In summary, we have described four perspectives of educational dissemination: R, D, & D; R, D, & D plus linkers; R, D, & D plus capacity-building, and, finally, the rejection of R, D, & D because the model did not result in school improvement, even with the addition of linkers and capacity-building. Again, we emphasize that these perspectives exist concurrently, but seem to have been generated sequentially in the search for effective school improvement.

How does the Student Team Learning dissemination effort relate to the four perspectives of educational dissemination? Our dissemination followed

the R, D, and D model, but we made full use of linkers whenever feasible, and our willingness to seek various entrance points and take advantage of unforeseen opportunities certainly reflects the "real world" approach. At the same time, although we did not actively seek to make school systems more responsive to educational innovation, we did operate through the NDN, whose sponsorship of awareness sessions does increase school system responsiveness.

It seems apparent that no one simple "model" will sufficiently describe the process by which school systems adopt an educational innovation. Barrows et al (1980) examined six models and found none sufficient to describe adoption processes that had occurred in 13 schools. This supports, of course, the "real world" perspective of school improvement. This perspective, however, is very much based on a prerequisite that may be the real key to the ineffectiveness of all our dissemination models--the prerequisite of inadequate technology. It is notable that, in educational dissemination, inadequate technology is accepted as a given.

What is inadequate technology? In education, it is a product or program that (1) is not specific enough to be understood; (2) has no clear description of how to use it, and/or (3) has no conclusive advantages over the status quo.

Products and programs having one or all of these deficiencies abound in education, and form the basis for our dissemination studies which, not surprisingly, find that the "dissemination effort" doesn't work. For example, Gross et al. (1971) studied the implementation of a "catalytic role model" in an elementary school. The implementation was a failure for one main reason--teachers did not really understand the innovation or what it entailed. Similarly, Charters and Pellagrin (1976) conducted a year-long

study of attempts to implement Differentiated Staffing in four schools. After a year's observation, they concluded that Differentiated Staffing:

> . . . was little more than a word for most participants, lacking concrete parameters. . . The word could (and did) mean widely differing things to the staff, and nothing to some. Thus, the innovation, if it can be called that, was little more than an evocative term whose substantive meaning was to be supplied by the professional staffs in the course of the project. (p. 13)

These two case studies are often cited to support the notion that dissemination of educational innovations falls apart at the implementation stage due to complex school and district cultural and political agendas. This interpretation overlooks the obvious--that failure in these cases was due to the lack of specification of the innovation--the condition referred to by Williams (1977) as specification failure. In short, in neither of these implementation efforts were the elements of the treatment or guides for its implementation and operation specified.

McLaughlin (1976) describes a mutual adaptation process in which schools and districts implement organizational change innovations, and concludes that mutual adaptation--essentially, redevelopment of the innovation by the teachers--promises to be the most effective dissemination road to travel. The innovations, however, are "not based on a model of organization change to be strictly followed, but a common set of convictions about the nature of learning and the purpose of teaching." Again, this model assumes specification failure as a given. As a result the mutual adaptation process also becomes a given: how else could an unspecified program be adopted?

The third element of inadequate technology--the lack of any relative advantage over current practice (Rogers and Shoemaker, 1971)--is commonly accepted in education and pointed to in almost every study as a major

impediment to dissemination (Dissemination Analysis Group, 1976; House, 1976; Mann, 1976; McLaughlin, 1976; Pincus, 1976). Nonetheless, none of these studies and, essentially, none of our current federally-funded efforts, imply that improvement of quality should be a priority of educational research and development. The priority, instead, is placed on implementation strategies that we might use to achieve more usage in schools of the current inadequate programs.

Implementation strategy is the most important part of the dissemination process, given that we have unspecified programs, no directions or training for their use, and no relative advantage for their use. The implementation strategy is paramount if the job is to get a school or district to accept a set of convictions that are not operationalized, that how-to-do-it training is not available for, and that in the short and long run is not found to be any more effective than what schools and districts are already doing. This is indeed a monumental task.

The Student Team Learning dissemination effort points to another possibility--the possibility that educational technology can be made more adequate. It is possible to specify what a program is, to specify training that will teach others to use the program, and to prove that use of the program will produce outcomes that are advantageous. This paper argues that some efforts should be made in this direction if nationwide school improvement is to be achieved. Many implementation problems will still remain--the cultural and political milieu of schools and school districts must still be confronted and worked with--but the job will be easier and much more worth doing if we are first able to produce adequate educational technology.

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